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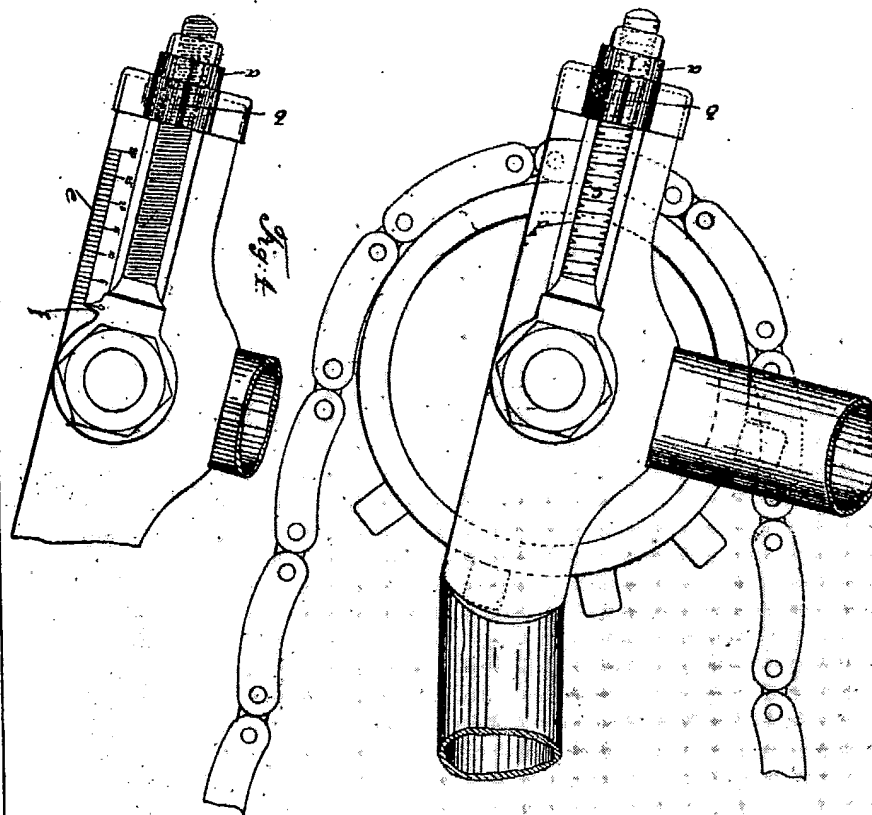


Fig. 1



Fig. 2



Fig. 3

[This Drawing is a reproduction of the Original on a reduced scale.]

N° 8412



A.D. 1896

Date of Application, 21st Apr., 1896

Complete Specification Left, 9th July, 1896—Accepted, 15th Aug., 1896

PROVISIONAL SPECIFICATION

DUPLICATE

Improvements in Apparatus for Adjusting the Gearing Chains
of Velocipedes.

We, WILLIAM CHRISTOPHER BARNES, Manufacturer, and CLAUDIUS OWEN HILLSDON Mechanician, both of Christopher Works, Chalton Street, London, do hereby declare the nature of this invention to be as follows:—

This invention has for its object to afford a ready means for the accurate
5 alignment of the driving and steering wheels of a velocipede.

To effect this we mark any convenient and corresponding number of divisions externally on each of the adjusting nuts of the chain adjuster and number each series of divisions consecutively and correspondingly. We then make a suitable mark upon each of the bearing plates against which such adjusting nuts bear and
10 file each of the adjusting bolts flat, either on the top or outer side so that the threads thereon may be easily counted.

By adjusting both nuts so that a corresponding number of the threads cut on the bolts appear above each nut while the corresponding division on each nut is brought opposite the mark on the bearing plate the accurate alignment of the
15 driving and steering wheels is ensured.

Or in lieu of the bolts serving as indices, a corresponding scale may be marked on each of the bearing stays of the driving wheel, while suitable pointers are carried on its axle, so that when the adjusting nuts are set, such pointers respectively indicate the corresponding division in each scale, thus showing that the wheels are
20 aligned.

Dated this 21st day of April 1896.

ELT & Co.,
Registered Patent Agents,
43 Southampton Buildings, London, Agents for Applicants.

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COMPLETE SPECIFICATION.

Improvements in Apparatus for Adjusting the Gearing Chains
of Velocipedes.

We, WILLIAM CHRISTOPHER BARNES, Manufacturer, and CLAUDIUS OWEN HILLSDON, Mechanician, both of Christopher Works, Chalton Street, London,
30 do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention has for its object to afford a ready means for the accurate alignment of the driving and steering wheels of a velocipede.

35 Figure 1 of the accompanying drawings shews in side elevation so much of a velocipede as is requisite to illustrate our invention;

Figure 2 is a detail view of the adjusting nut shewn in Figure 1, and

Figures 3 and 4 are detail views of certain modifications of our invention hereinafter more particularly described.

[Price 8d.]

Barns and Hillsdon's Apparatus for Adjusting the Gearing Chains of Velocipedes.

Our invention consists in furnishing each of the adjusting nuts of the chain adjuster with a scale *a*, consisting of an equal number of divisions placed equidistantly and numbered consecutively and correspondingly as illustrated at Figure 2. An alternative way of arranging the scale is shewn at Figure 3. Such scales may either be marked on the nuts themselves, or on suitable collars or their equivalents fitted thereto or mounted thereon. A suitable pointer *b* is placed on each of the bearing plates against which the adjusting nuts bear, while each of the adjusting bolts, (hereafter termed "eye bolts"), is filed or otherwise flattened on its outer side *c*, so that the threads thereof may be easily counted, and in order to further facilitate that operation grooves *d* may be cut in such flattened surface as shewn in Figure 1. By setting the adjusting nuts so that a corresponding number of such threads or grooves appear above each nut, while the corresponding division or number on each scale is brought opposite the pointer on each bearing plate, the accurate alignment of the driving and steering wheels of the machine is ensured.

A modification of our invention consists in placing auxiliary corresponding scales *e*, Figure 4, on the lower back stays wherein the driving wheel runs, and auxiliary pointers *f*, either on the eye bolts, as shewn in Figure 4, on the axle of the driving wheel, whereby we dispense with the necessity for either flattening or grooving the outer sides of the eye bolts in the manner above described.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed we declare that what we claim is;—

1. In a velocipede, adjusting nuts furnished with corresponding scales *a*, in combination with bearing plates provided with pointers *b*, and eye bolts having the upper sides *c* flattened, or flattened and grooved, all substantially as hereinbefore described and shewn.
2. In a velocipede, lower back stays furnished with auxiliary corresponding scales *e*, in combination with eye bolts provided with auxiliary pointers *f*, all substantially as hereinbefore described and shewn.
3. In a velocipede, lower back stays furnished with auxiliary corresponding scales *e*, in combination with auxiliary pointers *f*, placed on the axle of the driving wheel as hereinbefore described.

Dated this 9th day of July 1896.

ELT & Co.,
Registered Patent Agents,
43, Southampton Buildings, Holborn, London, Agents for Applicants.

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